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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Massimo Pizzorno

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EXAMINER

ANDERSON, GUY G

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,606	Applicant(s) PIZZORNO ET AL.	
	Examiner Guy G. Anderson	Art Unit 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- 1.1 In response to a pre appeal brief conference requested by applicant, a decision was made to reopen prosecution. Accordingly, the finality of the office action mailed 4/29/2008 is withdrawn.

Claim Rejections - 35 USC § 112

- 2.1 The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 2.2 Claim 48 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitation recited "optical fibers being enclosed within the outer jacket and separated from the optical core" is indefinite and fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention. What exactly does applicant mean by separated? Are they within the optical core but at the outer periphery of the optical core? Are they separated from the optical core by other materials such as aramid yarn shield or moisture barriers, while still being within the outer jacket?
- For purposes of examination, examiner has construed the limitation to read upon the fiber bundle disclosed in either Grosswig-1 or in Voet. (see below for proper citations.)

Claim Rejections - 35 USC § 102

- 3.1 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless –
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- 3.2 Claim 23 is rejected under 35 U.S.C. 102(a) as being anticipated by EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1). Examiner notes for the record that the Grosswig-1 reference is described in detail in applicants' disclosure at page 3.

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Regarding claim 23, Grosswig-1 discloses:

23. (Previously Presented) A telecommunication fiber optic cable for gas pipeline application and having a built-in leakage detecting device comprising: an optical core comprising a number of telecommunication optical fibers; an outer jacket covering the optical core; and one or more gas leakage detector optical fibers, said one or more gas leakage detector optical fibers being enclosed within the outer jacket.

[Fig. 1, #2-3, wherein the bundles of optical fibers comprise an “optical core” surrounded by an outer jacket, Fig. 1, #4-5, and wherein the disclosure describes leak detection techniques using the optical fiber to measure temperature variations. Fig. 4-5, temperature anomalies indicate presence of gas leak.]

Claim Rejections - 35 USC § 103

- 4.1 In the alternative, Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) “Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL). Examiner notes for the record that the Grosswig-1 reference is described in detail in applicants disclosure at page 3.

Regarding claim 23, Grosswig-1 discloses a device to monitor the state of gas pipelines comprising:

23a) A telecommunication fiber optic cable for gas pipeline application comprising: an optical core comprising a number of telecommunication optical fibers; an outer jacket covering the optical core. [Fig. 1, #2-3, wherein the bundles of optical fibers comprise an “optical core” surrounded by an outer jacket, Fig. 1, #4-5. See also entire disclosure of Grosswig-1 and applicants’ disclosure at page 3 describing this reference.]

Grosswig-NPL discloses using optical fibers along with a new measurement technique to detect leaks in pipelines. [In particular see Abstract, see also entire publication.]

Since Grosswig and his co-authors/inventors worked for the same assignee, it would have been obvious to them to combine the two ideas expressed in the two publications and to install leak detecting optical fibers in a telecom optical fiber cable bundle. Further, it would have been obvious to enclose the leak detecting fibers within the outer jacket of

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the optical fiber cable in order to protect the extremely fragile glass fibers from breakage.

- 4.2 Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) "Distributed Fiber Optical Temperature Sensing Technique" by Grosswig et al. (hereinafter Grosswig NPL). Examiner notes for the record that the Grosswig-1 reference is described in detail in applicants disclosure at page 3.

Regarding claim 48, Grosswig-1 discloses a device to monitor the state of gas pipelines comprising:

48a) A telecommunication fiber optic cable for gas pipeline application and having a built-in leakage detecting device comprising: an optical core comprising a number of telecommunication optical fibers; an outer jacket covering the optical core; and one or more gas leakage detector optical fibers, said one or more gas leakage detector optical fibers being enclosed within the outer jacket and separated from the optical core. [Fig. 1, #2-3, wherein the bundles of optical fibers comprise an "optical core" surrounded by an outer jacket, Fig. 1, #4-5. See also entire disclosure of Grosswig-1 and applicants' disclosure at page 3 describing this reference.]

Grosswig-NPL discloses using optical fibers along with a new measurement technique to detect leaks in pipelines. [In particular see Abstract, see also entire publication.]

Grosswig-1 discloses numerous fiber bundles that comprise an optical core, and in some of these bundles the fibers would be separated from the optical core to a greater extent than other fibers within the bundles. Therefore, it would have been obvious to one of ordinary skill in the art to place some of the leak detecting fibers at various locations in the fiber bundles and that would be separated by varying distances from the optical core.

- 4.3 Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chinese patent CN 1414283 A to Jiang in view of EP 1 235 089 A1 to Voet.

Regarding claim 48, Jiang discloses a device to monitor the state of gas pipelines comprising distribution type optical fiber sensors.

Voet discloses an optical fiber bundle capable of measuring at least one parameter in which there are numerous optical fibers in the optical core surrounded by an outer jacket,

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some of which are at different spatial locations from the central optical core. [Fig. 1, #2, 8, 5]

- 4.4 Claim 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) “Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL).

Regarding claims 24-25, strength rods and neutral axis with preferential bending planes are well known in the art and it would have been obvious for one of ordinary skill in the art to use strength rods and to set a preferential bending axis.

- 4.5 Claim 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) “Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL).

Regarding claims 26-27, fiber winding techniques such as helical and SZ are well known in the art and would have been obvious to a PHOSITA.

- 4.6 Claim 28 rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) “Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL).

Regarding claim 28, selecting a known material on the basis of its suitability for a particular purpose is within the general skill of a worker in the art.

- 4.7 Claim 29, 31, 33, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) “Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL).

Regarding claims 29, 31, 33, 36, supplying a primer for providing adherence with the jacket is well known in the art of making optical fibers and would have been obvious to a PHOSITA.

- 4.8 Claims 30, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL)

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“Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL).

Regarding claims 30, 32, providing a plurality of tubes that contain jelly is well known in the art of making optical fiber cables and would have been obvious to a PHOSITA.

- 4.9 Claims 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) “Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL).

Regarding claims 34-35, Grosswig-1 discusses providing a metal barrier comprised of various materials to make it gas tight and it is also is well known in the art of making optical fiber cables and would have been obvious to a PHOSITA.

- 4.10 Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) “Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL).

Regarding claim 37, selecting a known material on the basis of its suitability for a particular purpose is within the general skill of a worker in the art.

- 4.11 Claims 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) “Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL).

Regarding claims 38-39, providing a plurality of tubular elements around a central strength member and a cylindrical member with grooves is well known in the art of making optical fiber cables and would have been obvious to a PHOSITA.

- 4.12 Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) “Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL).

Regarding claim 40, selecting a known material on the basis of its suitability for a particular purpose is within the general skill of a worker in the art.

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- 4.13 Claims 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) “Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL).

Regarding claims 41-43, Grosswig discusses various types of metal tubing and welding procedures for same. Further, providing a metal central tube, and a non metal central tube inserted within the metal central tube, and wherein the non metal tube is plastic, is well known in the art of making optical fiber cables and would have been obvious to a PHOSITA.

- 4.14 Claims 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 978 715 B1 to Grosswig (hereinafter Grosswig-1) in view of Non patent literature (NPL) “Distributed Fiber Optical Temperature Sensing Technique” by Grosswig et al. (hereinafter Grosswig NPL).

Regarding claims 44-47, discovering the optimum or working range involves only routine skill in the art and it would have been obvious to a PHOSITA at the time of invention to have outer jackets and strength rods of the dimensions claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy G. Anderson whose telephone number is 571.272.8045. The examiner can normally be reached on Tuesday-Saturday 1400-2200.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

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like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Guy G Anderson/
Examiner, Art Unit 2883

/Frank G Font/
Supervisory Patent Examiner, Art Unit 2883